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THE STRUCTURE OF ELECTROCHEMICAL ADSORBATES

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by

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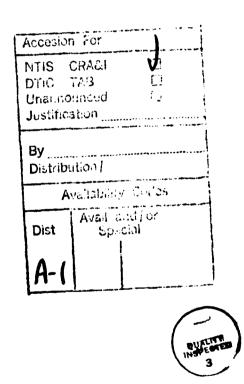
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THE STRUCTURE OF ELECTROCHEMICAL ADSORBATES

J. G. Gordon (IBM) and L. Blum (U. of Puerto Rico)

We attempted to obtain the x-ray absorption spectrum at the bromine edge of a submonolayer of bromide ion adsorbed electrochemically on an Ag(111) surface. During the experiment, the silver electrode was immersed in solution and held at controlled electrochemical potential. We employed grazing incidence excitation with fluorescence detection. A clear edge jump was observed, but with the available collection time, the resulting spectra did not have a good enough signal-to-noise to be useable. Good transmission EXAFS spectra of model compounds MgBr₂.61I₂O, AgBr and NaBrO₃) were obtained. In addition, x-ray absorption spectra of a series of copper containing model compounds (anhydrous CuSO₄, CuSO₄.5H₂O, Cu₂O, CuO and Cu metal) were measured. The amplitude and phase parameters of the absorber-backscatterer pairs, Cu-O, Cu-S and Cu-Cu, have been extracted and will be used to analyze the EXAFS spectrum of a half monolayer of Cu deposited on a Au(111) single crystal substrate, which was obtained earlier.



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